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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/669,185

09/23/2003

Justin Won

STL11321

2611

7590

11/04/2005

David K. Lucente
Seagate Technology LLC
Intellectual Property- COL2LGL
389 Disc Drive
Longmont, CO 80503

EXAMINER

OLSON, JASON C

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

✓ 10/669,185

Applicant(s)

WON ET AL.

Examiner

Jason C. Olson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 8-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 and 13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by
Codilian et al. (US 6,707,635).

Regarding claim 13, Codilian teaches a storage medium having at least one recording surface that includes position information (see figure 3, items 26 and 40); a transducer associated with the one recording surface (see figure 3, item 32), wherein a position error signal is generatable when the position information is read by the transducer (see col. 5, ln. 44-46); a moveable assembly upon which the transducer is mounted (see figure 3, item 36), wherein a range of mobility of the moveable assembly allows the transducer to be positioned as necessary to allow the transducer to follow a path on the recording surface (see col. 4, ln. 50-55); and control circuitry adapted to estimate repeatable runout by performing actions that include: reading position error signals of the transducer for non-consecutive revolutions to obtain position error signal data (see col. 5, ln. 28-48 and col. 6, ln. 10-15; N=1 for the initial number of disk rotations during the initial learning process where the position error signals are determined. Then during normal disk operations the position error signal of the tracks are read again by the

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transducer to further reduce RRO, constituting non-consecutive revolutions to obtain position error signal data); and combining the position error signal data to obtain an estimate of repeatable runout for the transducer (see col. 5, ln. 28-48 and col. 6, ln. 10-15; the PES signal from the first revolution is used to determine an initial RRO estimate during an initial learning process. During the next learning process, the PES signal reproduced from the non-consecutive rotation is used to update the RRO estimate).

Regarding claim 14, Codilian teaches reading a position error signal of another transducer for at least one additional revolution of the storage medium wherein at least one additional revolution of the storage medium takes place between the non-consecutive revolutions of the storage medium (see col. 39-50; it is interpreted by the examiner that after a first RRO value set is calculated for a first track or tracks on a first side of the disk based on one disk revolution, RRO is then calculated for a second track or tracks on a second side of the disk, using another transducer, based on at least one additional disk revolution, then RRO is again calculated for the first track or tracks on the first side of the disk based on an additional revolution or revolutions. In this manner, position error signals of the other transducer are read between non-consecutive revolutions of the disk).

Regarding claim 15, Codilian teaches the estimate of repeatable runout for the transducer is obtained by combining the position error signal data additional position error signal data for the transducer (see col. 5, ln. 48-54).

Regarding claim 16, Codilian teaches the position error signal data are combined by averaging (see col. 6, ln. 25-36).

Regarding claim 17, Codilian teaches recording the estimate of repeatable runout for the transducer for use in repeatable runout compensation (see col. 5, ln. 57-63).

Regarding claim 18, Codilian teaches the estimate of repeatable runout for the transducer is recorded on at least one of the recording surfaces (see col. 6, ln. 8-10).

Regarding claim 19, Codilian teaches the estimate of repeatable runout for the first transducer is recorded in a memory (see col. 7, ln. 44-49).

Regarding claim 20, Codilian teaches the control circuitry includes a microprocessor (see col. 7, ln. 2-5).

Regarding claim 21: Claim 21 has limitations similar to those treated in the above rejection(s), and are met by the references as discussed above.

Regarding claims 1-7: method claims 1-7 are drawn to the method of using the corresponding apparatus claimed in claims 13-20. Therefore method claims 1-7 correspond to apparatus claims 13-20 and are rejected for the same reasons of anticipation as used above.

Response to Arguments

Applicant's arguments filed 08/31/05 have been fully considered but they are not persuasive. The applicant argues that, "the number of disk rotations" is not identical to "non-consecutive revolutions" and that Codilian fails to disclose "non-consecutive revolutions". The examiner respectfully disagrees. Codilian teaches, during an initial learning process, obtaining position error signals (PES's) from servo tracks for a first number of disk revolutions, N, see column 5, lines 28-48. The first learning process is done on multiple different tracks if not all the tracks. During a normal disk operation and after the initial operation, the position error signals

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from the servo tracks are once again obtained for a number of disk revolutions for the previous tracks, see column 6, lines 10-15. Codilian discloses that the first number of disk revolutions can be one, or $N=1$. Therefore, if a group of tracks or all the tracks on the disk are revolved just one time during the initial PES obtaining process, then when the second PES obtaining process occurs the transducer will the servo tracks for non-consecutive revolutions to obtain position error signal data.

The applicant also argues that Codilian's concept of estimating repeatable runout (RRO) is not the same as the applicants because Codilian teaches an RRO estimator that is responsive to a previous RRO estimate to generate a new RRO estimate instead of combining the position error signal data to obtain an estimate of repeatable runout, as claimed by the applicant. The examiner respectfully disagrees because Codilian teaches the PES signal from the first revolution is used to determine an initial RRO estimate during an initial learning process, see column 5, lines 28-48. During the next learning process, the PES signal reproduced from the non-consecutive rotation is used to update the RRO estimate see column 6, lines 10-15. As it can be seen, the position error signals are combined to obtain an estimate of repeatable runout.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C. Olson whose telephone number is (571)272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCO
November 1, 2005




DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600